NCMS/CTMA
Test Equipment Program Translator

JTEG

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Commercial Technologies for Maintenance Activities (CTMA)

NCMS
An NCMS/DoD Partnership

Test Equipment Program Translator

Background:

Electronics repair facilities continue to support legacy test systems well beyond their expected life because they are unable to afford re-hosting the legacy test program sets (TPSs). This situation forces them to retain outdated equipment that is difficult and costly to maintain thereby jeopardizing repair capability and support to the war-fighter.

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Requirement:

Demonstrate universal re-host capabilities for both in-circuit and functional test programs, minimizing the incurred investment associated with migrating established TPSs as legacy test systems are removed form service.   The enabling software re-host package shall contain an integrated set of tools and a variety of functions, including:

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Requirement:

- Test program screening
  - Identifies critical From/To capabilities for the migration
  - Identifies I/O requirements with test station capability at the pin level.
  - Identifies the from-tester capabilities that cannot be identified
- Interactive Test Station capability (Instrumentation+) definition
- Migrate Test Program Processing to an intermediate format
  - Open Standard Database formats (ATML, XML, etc)

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Requirement:

- Migrate from intermediate format to a variety of Test System Configurations
  - Open Standard Programming languages (C, C++, C# etc)
- Output Test Execution Control Definition
- Suitable for use on any PC-based test system
- Supports execution of test and analysis code written in multiple ADEs
- Supports modern display and access technologies
  - Dynamic HTML
  - Interactive graphics and video
  - XML
- Can be custom configured or used out-of-the-box

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Notional Approach:

- Under a 3-phase effort, demonstrate test program conversion technology that can:
  - 1) process diverse test system coding schemes
  - 2) identify rehost pitfalls
  - 3) output functional code for a target test system.

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Notional Approach:

- The planned investment, using CTMA Program resources, involves "proof of concept" validation at the Warner Robins Air Logistics' Center.

  Emphasis will be placed on ensuring that the established capabilities are transferable to the expanded defense electronics repair industrial base (other ALCs, services, commercial activities, etc.) and facilitate affordable access to a diverse array of equipment upgrade options.

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Phase 1:

- Define an intermediate data format and screening capability

- Define the output data format and structures. These should take into account the possibility of future re-host requirements.

- Target one test system for prototype and proof of concepts. Using one "active" TPS, migrate all tests.

- Maintain as much of the existing interface capability as practical.

- Incorporate data capture and storage.

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Phase 2:

- Complete the implementation of an independent and intermediate TPS representation using open standard formats.

- Complete the input process for at least 2 legacy test platform types, Currently identified as DATSA and ETIS.

- Complete the output process for at least one common test platform. Currently identified as Teradyne's Spectrum.

- Provide linkage into logistic database, routing control and/or repair control.

- Provide enhanced diagnostic capability recommendations

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Phase 3:

- Complete input processing for identified legacy test systems

- Complete output processing for multiple platforms

- Provide expanding intermediate capability as required.

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- **Interested Participants:**
  - **Warner Robins - AF**
  - **Tobyhanna - Army**
  - **NSWC Crane - Navy**
  - **Teradyne**

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